

Application No. : 09/817,842
Filed : March 26, 2001

REMARKS

Claims 15-26, 34-41 and 46-55 were pending in the application. By this paper, Applicant has amended Claims 15-18, 20, 24-26, 36, 38, 39, 46, 50, 52 and 53. Hence, Claims 15-26, 34-41 and 46-55 are presented for examination herein.

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Information Disclosure Statement

Applicant submits herewith an Information Disclosure Statement and Form PTO-1449 citing twenty-seven (27) references for the Examiner's consideration.

10 *§112 Rejections*

By this paper, Applicant has amended Claims 16, 20, 28, 36, 39, 46, 50, 52 and 53 to overcome the Examiner's rejections. Applicant believes that all such claims as amended are fully supported by the specification as filed, and hence introduce no new matter.

15 *§102 Rejections*

1. Regarding the Examiner's Section 102 rejections of Claims 15-20, 23, 35, 38-41, 46, 48 and 50-53 over Brune (US 5,984,875), Applicant provides the following remarks.

20 **Claim 15** - Regarding the Examiner's rejection of Claim 15 over Brune, Applicant traverses this rejection in its entirety. The Examiner respectfully has conveniently left the word "semi" off of the recited limitation of "single semiconductive die" (see page 4, line 6, Par. 7 of the Office Action); Brune in no way teaches or suggests a single semiconductive die for the processor and communications device. The Examiner cannot claim inherent teaching, and hence the Section 102 rejection is improper and should be withdrawn.

25 Furthermore, a circuit board is not a die (the term "die" being well known to those of ordinary skill in the integrated circuit arts, especially when interpreted in light of Applicant's detailed specification, as being a single piece of semiconductive material (e.g., silicon, GaAs, SiGe, etc.)). Where does Brune even remotely teach this?

30 Moreover, with respect to any prospective obviousness rejection the Examiner might lodge, Brune's teaching of a circuit board (i.e., board level) electronics teaches away from use in

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a human being as now recited in Claim 15, since a board as described by Brune simply would not fit within a human intestinal tract (especially along with the remaining components recited in Applicant's claimed invention of Claim 15) unless properly miniaturized. Brune makes no teaching or suggestion of (i) such miniaturization, or (ii) use of his invention in a human being.

5 Similarly, Applicant also notes that "[A] patentable invention may lie in the discovery of the source of a problem even though the remedy may be obvious once the source of the problem is identified. This is part of the 'subject matter as a whole' which should always be considered in determining the obviousness of an invention under 35 U.S.C. § 103." In re Sponnoble, 405 F.2d 578, 585, 160 USPQ 237, 243 (CCPA 1969). See MPEP 2141.02; "The court found the inventor
10 discovered the cause of moisture transmission was through the center plug, and there was no teaching in the prior art which would suggest the necessity of selecting applicant's plug material which was more impervious to liquids than the natural rubber plug of the prior art." Brune does not in any way demonstrate an appreciation of the problem solved by Applicant's claimed invention; i.e., reduction in physical size and power consumption so that the
15 recited apparatus can be used in a human being.

Claim 16 - Regarding Claim 16, this claim as amended recites limitations which Brune in no way teaches or suggests; i.e., optimization comprising selecting a processor core configuration including at least one extension that satisfies a target core speed criterion while minimizing gate
20 count.

Claim 39 – Claim 39 as amended herein now recites limitations relating to including at least one of hardware and software extensions particularly adapted for the processing of the recited sensor data. Brune in no way teaches or suggests processor core hardware or software
25 extensions, let alone ones particularly adapted for the applications of interest (i.e., processing sensor data).

Claim 40 – Claim 40 recites the limitation of a single semiconductive die, and hence for reasons similar to those set forth for Claim 15 above, Claim 40 cannot as a matter of law be
30 anticipated (Brune in now way teaches, inherently uses, or suggests a single semiconductive die).

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Claim 52– Claim 52 as amended herein now recites limitations relating to selecting a processor configuration particularly adapted to reduce the cycle count used in processing instructions necessary to implement at least one of the recited sensor configuration and communications configuration. Brune in no way teaches or suggests selecting a processor core core configuration during design, let alone one particularly adapted to reduce cycle count for the applications of interest (i.e., sensor and communications configurations).

2. Regarding the Examiner's Section 102 rejections of Claims 15, 16, 20, 35, 38, 39, 46 and 50-53 over Alfano (US 6,240,312), Applicant provides the following remarks.

Claim 15 - The gist of the Examiner's arguments regarding Claim 15 seems to be that Alfano somehow inherently teaches (i) a semiconductive die, and (ii) that the processor and communications device are on the same die. With all due respect, the disclosed structure of Alfano in no way inherently requires or even suggests that the communications device and the processor are formed on the same die as recited in Claim 15.

Claim 38 – Claim 38 as amended herein recites limitations relating to the data processor being designed so as to specifically consider both die size and power consumption for a given processor speed through at least elimination of gates that would otherwise be present but for said design considerations. Alfano in no way teaches or suggests such functionality; Applicant submits that Alfano is completely silent on this matter, and hence cannot reasonably anticipate Claim 38 as amended.

Claim 39 – Claim 39 as amended herein now recites limitations relating to including at least one of hardware and software extensions particularly adapted for the processing of the recited sensor data. Alfano in no way teaches or suggests processor core hardware or software extensions, let alone ones particularly adapted for the applications of interest (i.e., processing sensor data).

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Claims 46 and 50 – Claim 46 as amended herein now recites limitations relating to the data processor comprising at least one instruction particularly adapted for performing mathematical operations necessary for processing of data from said at least one image sensor. Alfano in no way teaches or suggests processor instructions particularly coded or adapted for performing mathematical operations (e.g., FFTs, DCTs, etc.) necessary for processing image sensor data.

Similar logic applies to Claim 50, also amended herein regarding such mathematical operations/instructions.

§103 Rejections

Claims 20-22 – Regarding Par. 10 of the Office Action, Applicant has herein amended Claim 20 to alter its dependency to Claim 16 (versus 15). Claim 16 recites that the data processor comprises at least a processor core optimized for power consumption, said optimization comprising selecting a processor core configuration including at least one extension that satisfies a target core speed criterion while minimizing gate count. Hence, the combination of Brune and Kratz (US 4,041,461), or Alfano and Kratz, cannot render the claimed inventions of Claim 20, *et seq*, obvious, since none of these references teach an extensible processor, let alone one with a selectable core configuration that achieves one or more goals of the design space (e.g., target speed while minimizing gate count). **Respectfully, performing an FFT or Butterfly on a prior art fixed-architecture processor is a far cry from adding an extension specifically adapted for an FFT or Butterfly, and selecting a configuration at the time of design of the processor to optimize the resulting processor when synthesized (i.e., gate logic).**

Claims 24-26 – Regarding Pars. 11 and 12 of the Office Action, Applicant has herein amended Claims 24-26 to alter each dependency to Claim 16 (versus 15). Claim 16 recites that the data processor comprises at least a processor core optimized for power consumption, said optimization comprising selecting a processor core configuration including at least one extension that satisfies a target core speed criterion while minimizing gate count. Hence, the combination of Brune and Souissi (US 5,671,247,461), or Alfano and Souissi (or alternatively Robert (6,636,566 or PulseON article), cannot render the claimed inventions of Claim 24-26 obvious,

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since none of these references teach an extensible processor, let alone one with a selectable core configuration that achieves one or more goals of the design space (e.g., target speed while minimizing gate count).

5 **Remaining Claims** – Applicant submits that each of the remaining claims not specifically discussed above are each novel and non-obvious for reasons similar to those already proffered herein (e.g., Claim 54 depends on Claim 53, which depends on Claim 52, the congruence of which clearly distinguishes over the cited art on the basis of lack of teaching of extensibility, user-configurability at time of design, etc. as already discussed.

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Accordingly, Applicant respectfully submits that all pending claims as presented herein are in condition for allowance.

Other Remarks

15 Applicant hereby specifically reserves the right to prosecute claims of different or broader scope, including those of non-elected inventions, in a continuation or divisional application.

Applicant notes that any claim cancellations or additions made herein are made solely for the purposes of more clearly and particularly describing and claiming the invention and responding to the aforementioned restriction election, and not for purposes of overcoming art or
20 for patentability. The Examiner should infer no (i) adoption of a position with respect to patentability, (ii) change in the Applicant's position with respect to any claim or subject matter of the invention, or (iii) acquiescence in any way to any position taken by the Examiner, based on such cancellations or additions.

Furthermore, any remarks made with respect to a given claim or claims are limited solely
25 to such claim or claims.

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If the Examiner has any questions or comments which may be resolved over the telephone, he is requested to call the undersigned at (858) 675-1670.

Respectfully submitted,

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